

REMARKS

Reconsideration is respectfully requested. Claims 1-17 are present in the application. Claims 1, 8 and 11 are amended herein. Claim 5 is canceled. New claims 18 and 19 are added. Claims 6, 9, 16 and 17 have been allowed.

Claims 1-5, 7, 8, 10-15 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Cobbs et al (US5,600,350) in view of Goetz et al (US5,170,416).

Applicant respectfully traverses, amending claims 1, 8, 11, and canceling claim 5.

Considering now the teaching of Cobbs et al, in Cobbs, a sensor module 200 (Fig. 10) scans a test pattern (406 in Fig. 5) along the carriage scan axis with the sensor module 200 (column 7, lines 21-23). The output of the sensor module is amplified and filtered to be sampled to provide digital data (sine wave) through A/D converter 304 to a micro processor controller 306 (column 7, lines 55-61). The sensed sine wave is compared with a reference sine wave to produce the difference which indicates which cartridge is out of alignment (column 7, line 63 - column 8, line 3). In addition, the sampling of the sensor output is made in synchronism with sample pulses generated based on carriage position encoder 310 (corresponding to the applicant's linear scale encoder 109 and 205).

On the other hand, in applicant's invention, the output of sensor 10 (Fig. 2) is binarized by pattern detection unit 209 (see Fig. 6). The rising and/or falling edge of the binary signal is used to locate the position of the carriage on which at least one head is mounted, referring to the value of the counter (205) of a linear scale at that time and referring to the value of the timer (207) at that time. Cobbs et al fails to teach this feature of applicant's invention that a carriage position is located at a time the sensor senses a pattern element during its movement. Further, neither does Goetz et al.

Therefore, even though Goetz et al suggests a high-resolution position detecting means as stated in the office action, it might be unclear or even impossible for a person skilled in the art to know how the teaching of Goetz et al is combined with that of Cobbs et al to create applicant's invention.

Accordingly, the combination neither teaches nor suggests the claimed invention. Both independent claims 1 and 11, and their dependent claims are submitted to define over the combination of Cobbs et al in view of Goetz et al.

New claims 18 and 19 are added and are also believed to be allowable.

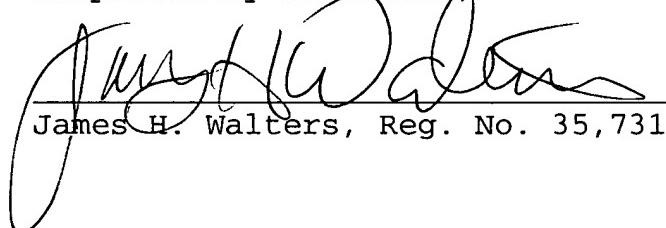
Support for claim 18 is found in the specification as filed, at page 18, for example.

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Amdt. dated February 24, 2005
Reply to Office action of August 26, 2004

Support for claim 19 is found in the specification as file at page 24, for example.

In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicant's attorney at 503-224-0115 if there are any questions.

Respectfully submitted,



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